

Users and Uses of Patient Records

Report of the Council on Scientific Affairs

Council on Scientific Affairs, American Medical Association

At present, there is significant momentum for developing and implementing computer-based patient records systems. It is essential that their development be guided by the functional requirements of the users and uses of patient records. Users can be grouped into seven categories: providers, patients, educators, researchers, payers, managers and reviewers, and licensing and accrediting agencies and professional associations. Uses of patient records include fostering continuity of care, supporting diagnosis and choice of therapy, assessing and managing health risks, documenting the services provided, maintaining accurate medical histories, billing and verifying payment, documenting professionals' experience, teaching students, preparing conferences and presentations, conducting research, formulating practice guidelines, and providing data to support utilization review, quality assurance, accreditation, and licensure. Patient records can be classified as primary records used by professionals while providing health care services or secondary records derived from primary records to aid nonclinical users. Protecting the confidentiality of patient information will restrict access to primary records for some users and should prevent inclusion of sensitive data in secondary records. The design features to be incorporated into computer-based record systems should expand the record's function from that of a simple device for documenting events into a powerful tool for providing and managing care. (Arch Fam Med. 1993;2:678-681)

The Institute of Medicine recently released its report, *The Computer-Based Patient Record: An Essential Technology for Health Care*.¹ This report is the result of an 18-month study by a multidisciplinary committee of experts charged with the following tasks: to examine the current state of medical record systems, to identify impediments to the development and use of improved record systems, to identify ways to overcome those impediments, to develop a research agenda to advance medical record systems, and to recommend policies or strategies for achieving improved patient records. To accomplish its charge, the committee established three subcommittees: Users and

Uses, Technology, and Strategy and Implementation. Each subcommittee had approximately 15 members and 70 advisors, including physicians, nurses, dentists, medical records professionals, hospital administrators, researchers, congressional staff, and representatives of patient groups, computer vendors, third-party payers, government agencies, and professional organizations. The subcommittees were thus able to bring a broad range of experience and perspectives to bear on specific issues related to patient records.

This report will focus on the users and uses of patient records rather than the technologies involved. Understanding who uses patient records, for what purposes records are used, and the functional requirements of those users is essential to the development of patient records systems that are

From the Group on Science, Technology, and Public Health, American Medical Association, Chicago, Ill.

acceptable to health care practitioners. An understanding of the needs of patient records users is required not only by system developers and vendors but also by those individuals involved in making decisions about acquiring patient records system technology. In addition, users are likely to benefit from having a more complete understanding of all of the other users who rely on patient records and the various ways in which records are used. Health care practitioners who generate and record data in patient records may benefit from knowing why certain infrequently used data elements are captured and how they are essential to other clinical users. Nonclinical users should understand how and why records are maintained so that they can more accurately interpret data.

WHO ARE THE USERS OF PATIENT RECORDS?

A comprehensive list of patient records users would essentially parallel a list of the individuals and organizations constituting the health care sector. A user can be defined as an individual who enters, verifies, corrects, analyzes, or obtains information from the record, either directly or through an intermediary. Users vary in how and why they use patient records. Individual patient records users and the institutions with which they are affiliated generally can be classified in seven major categories.

First are the individuals and institutions involved in the provision of patient care. Such health care professionals include not only physicians, nurses, and dentists but a wide array of other health workers such as chaplains, dental hygienists, laboratory technologists, occupational therapists, optometrists, pharmacists, physical therapists, physician assistants, radiology technologists, respiratory therapists, and social workers. As seen by the committee, these professionals use patient records to foster continuity of care; support diagnostic work and decision making about treatment; document, assess, and manage risk for patients; and document services that are ordered and provided. The institutions providing health care in which these professionals work are varied. They include inpatient and outpatient settings, single institutions and systems of institutions, and government and private organizations. Their size, scale, and needs vary widely. They include, among others, physician offices (group practices and solo practitioners), ambulatory surgery centers, donor banks, health maintenance organizations, home care agencies, hospices, hospitals (general and specialty), nursing homes, preferred provider organizations, psychiatric facilities, public health departments, and substance abuse programs.

Patients and their families, as recipients of health care, are the second major type of patient records user. They are likely to use records to document the services received, maintain accurate medical history, serve as proof of identity, self-manage care, and verify billing.

Health care education describes the third category of patient records user. Students and educators in schools of

medicine, nursing, allied health, and public health all rely on patient records. Uses in this category include documenting health care professionals' experience, preparing conferences and presentations, and teaching students.

A fourth category of user involves those individuals and organizations involved in research. This category includes individual health services researchers and clinical investigators, disease registries, health data organizations, health care technology developers, and research or policy centers. Individuals and organizations using patient data for research may use it to develop new products, conduct clinical research, assess technology, study patient outcomes, study effectiveness and cost-effectiveness of patient care, and develop registries and epidemiological databases. An evolving use of patient records data is to support clinical research for the development of guidelines for clinical practice.

Individuals and institutions involved in reimbursement for patient care constitute a fifth patient records user group. Benefits managers for employers and claims adjudicators for insurance companies are among the users in this category. Institutional users include business-health care coalitions, employers, and federal, state, and private third-party payers. Their uses include documenting services for payment, billing for services, submitting insurance claims, adjudicating insurance claims, determining disabilities, calculating, reporting, and managing costs, and performing actuarial analysis.

A sixth category of users includes individuals and institutions involved in management and review of patient care, which currently includes health care institution administrators, financial managers, quality assurance managers, records professionals, unit clerks, and utilization review managers. Institutional users in this category include Medicare peer review organizations and companies involved in quality assurance, risk management,

Members of the Council on Scientific Affairs

Yank D. Coble, Jr, MD (*Vice-Chairman*), Jacksonville, Fla; E. Harvey Estes, Jr, MD (*Chairman*), Durham, NC; C. Alvin Head, MD (*Resident Representative*), Tucker, Ga; Mitchell S. Karlan, MD, Beverly Hills, Calif; William R. Kennedy, MD, Minneapolis, Minn; Patricia Joy Numann, MD, Syracuse, NY; William C. Scott, MD, Tucson, Ariz; W. Douglas Skelton, MD, Macon, Ga; Richard M. Steinhilber, MD, Cleveland, Ohio; Jack P. Strong, MD, New Orleans, La; Christine C. Toevs (*Medical Student Representative*), Greenville, NC; Henry N. Wagner, Jr, MD, Baltimore, Md.

AMA Staff

Jerod M. Loeb, PhD (*Secretary*); Robert C. Rinaldi, PhD (*Assistant Secretary*).

Report written by Don E. Detmer, MD, and Elaine B. Steen, Charlottesville, Va.

and utilization management. They use records to document case mix in institutions, departments, or physician practices, analyze severity of illness, formulate practice guidelines, manage risk, characterize the use of services, provide the basis for utilization review, perform quality assurance, allocate resources, analyze trends and develop forecasts, and communicate between departments.

Associations of health care professionals and institutions, accreditation organizations, institutional licensure agencies, professional licensure agencies, and policy development agencies and organizations constitute a seventh major patient records user group. This category in-

Problem lists including current status and clinical rationale should become standard

cludes the use of patient records as evidence in litigation, fostering postmarketing surveillance, assessing compliance with standards of care, accrediting professionals and institutions, identifying trends in the provision of health care, allocating resources, conducting strategic planning, monitoring the public health, and supporting policy-making.

The Institute of Medicine study committee did not seek to identify all of the data elements that should be present in future patient records. The committee did, however, reach several findings about patient records content. First, the committee identified two types of patient records to reinforce that all users should not have access to all parts of patient records so that patient confidentiality can be maintained. *Primary records* are used by health care professionals while providing patient care services to review previously recorded patient data or to document their own observations, actions, or instructions. *Secondary records* are derived from primary records and contain data elements to aid nonclinical users in supporting, evaluating, or advancing patient care. These records are often combined to form secondary databases that are specific for particular uses (eg, research, reimbursement).

Second, problem lists including current status and clinical rationale should become standard parts of future patient records. Neither data element is currently a standard part of patient records, but both would benefit multiple users, including subsequent health care professionals, students, researchers, and quality assurance managers. In addition, researchers in particular seek functional status and other outcome measures as standard patient records data elements. These data elements may also benefit practitioners by helping them recognize significant impairments and changes in function of their patients that they may have otherwise overlooked.² The committee supported the use of functional status measures, but recognized that to be truly useful, widespread agreement on standard measures for health status assessment is needed

so that valid comparisons can be made over time for an individual patient and across populations of patients.

Third, as new records systems are designed, records and record-keeping habits need to be studied to identify redundancies that can be eliminated through future patient records. In addition, the committee recommended that since the data must be accurate and perceived as reliable, primary users should perform the data entry. Thus, the needs of secondary users must not put undue burden on those directly involved in patient care.

Fourth, to achieve linkages and the ability to aggregate data, several conditions must be met. A set of core data elements will need to be defined and recorded in all patient records. Standardized coding systems must be available and used by the individuals involved in recording patient records data. A common data dictionary must be developed so that any clinical data common to different specialties or professions are interchangeable. Some of these development efforts are under way and making progress.

Patient records and records systems must meet a variety of other requirements to fulfill user needs, such as records format, system performance, linkages, intelligence, reporting capabilities, control and access, and training and implementation. To meet these requirements, future patient records will be computer based.

Format

In the committee's opinion, patient records should include a front-page problem list, provide an ability to flip through the record easily, and be integrated among disciplines and sites of care.

System Performance

Patient records systems should offer rapid retrieval, 24-hour access for clinical users, convenient locations for workstations, and easy data entry.

Linkages

Patient records systems should be able to link with other information systems within health care institutions (eg, laboratory, billing), enable transfer of information among specialties and sites of care, provide connections to relevant scientific literature at the patient records workstation, be able to access or send data to other institutional databases and registries, and offer electronic transfer of billing information to third-party payers.

Intelligence

Patient records systems should offer decision support, clinical reminders, and alarm systems.

Reporting Capabilities

Patient records systems should be able to produce routine documents from data in the record (eg, discharge summaries, insurance forms), offer easily customized user interfaces (eg, entry screens, report formats), and be able to present test results in graphic form.

Control and Access

Patient records systems should offer appropriate access to patients and their authorized representatives. They must also include adequate safeguards against violation of confidentiality and abuse of the system.

Training and Implementation

For systems to be accepted and used they must require minimal training. Graduated implementation must be possible to ease the financial and organizational demands required for the introduction of a computer-based patient records system.

CONCLUSION

The Institute of Medicine study committee calls for broadening the basic notion of a patient record "from that of a location or device for keeping track of patient care events to that of a resource with much enhanced utility in patient care, management of the health care system, and extension of knowledge."¹ The future patient record is not to be simply a computer-based version of the current paper record. To meet the needs of the health care system and develop a more scientifically based practice of clinical care, future patient records systems will be expanded to include functions beyond those found in current records systems. These new functions—including access to medical literature, clinical decision support, and clinical practice guidelines at the time and site of care—will aid clinicians in the care process. In addition to new functions, computer-based patient records (CPRs) will offer the benefit of being available when and where they are needed as compared with paper records that in several studies are reportedly absent 30% of the time.^{3,4} Thus, CPR systems will help to improve care by providing improved access to patient information and by reminding, linking, and guiding health care professionals and organizations. They should also help to alleviate the administrative burden faced by clinicians by reducing the need for redundant data entry and generating routine reports.

Users have a key role to play in the optimal functioning of future records systems. First, users must have confidence in the data, which implies that the data must be entered by the practitioner who collects them. Second, they must use the record actively in the clinical process. Third, they must exploit the CPR as a

resource for studying the effectiveness and efficiency of clinical processes, procedures, and technologies. Finally, future patient records systems must be efficient. This means the CPR must be friendly, but it also means that the user must be knowledgeable about its features and uses.

Future patient records systems must be designed to serve a multitude of users and understand their needs. Successful design and implementation of CPR systems will require that users be active participants in the development process. As one of its recommendations, the committee recommended that the private and public sectors join in establishing an organization to promote the development and implementation of the CPR. One of the tasks of such an organization would be to create a forum for users to participate in CPR development. Users can support patient records improvement at the institutional or local level by becoming informed about patient records and medical informatics issues.

The future computer-based patient record is truly a watershed technology. As such, CPRs offer more to patient care, and the health professionals charged with providing it, than any other single health care technology. Tremendous progress is achievable within a decade. No current patient records prototype does everything envisioned for the CPR, but with collaboration and commitment, the concepts (software) and equipment (hardware) can be brought together to the benefit of all.

Accepted for publication March 9, 1993.

This report is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all the facts and circumstances involved in an individual case and are subject to change as scientific knowledge and technology advance and patterns of practice evolve. This report reflects the scientific literature as of October 1991.

This report was presented at the Annual 1992 House of Delegates Meeting as an informational report of the Council on Scientific Affairs, Chicago, Ill, June 1992.

Reprint requests to the Group on Science, Technology, and Public Health, American Medical Association, 515 N State St, Chicago, IL 60610 (Jerod M. Loeb, PhD).

REFERENCES

1. Institute of Medicine. *The Computer-Based Patient Record: An Essential Technology for Health Care*. Washington, DC: National Academy Press; 1991.
2. Nelson EC. Using outcome measures to improve care delivered by physicians and hospitals. In: *Effectiveness and Outcomes in Health Care*. Washington, DC: National Academy Press; 1990:202-211.
3. *Medical ADP Systems: Automated Medical Records Hold Promise to Improve Patient Care*. Washington, DC: General Accounting Office; 1990.
4. Tufo HM, Speidel JJ. Problems with medical records. *Med Care*. 1971;9:509-517.